




Sewage Related Litter: Flushing Toilets onto Beaches

Research Report
June 2007



Sewage Related Litter: **Flushing Toilets onto Beaches**

Written by Caroline Berkley

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ENCAMS is a registered charity No.1071737
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ISBN 978-1-904860-08-2
Designed and printed by Lake (www.lakewebsite.co.uk)

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1 EXECUTIVE SUMMARY

ENCAMS is the independent charity behind the Keep Britain Tidy campaign. One of our key objectives is to reduce aquatic litter and improve the surrounding environments, including beaches, waterways and estuaries.

Sewage related litter occurs after people dispose of sanitary items such as condoms, cotton bud sticks and tampons by flushing them down the toilet. They then enter a sewer system which is not designed to process them. Although the system has filters, items such as cotton buds and condoms can pass through. At times of heavy rainfall sewage can also escape from overflows directly into rivers and seas, depositing sewage litter along our waterways and beaches.

Although recent European legislation has required water companies to improve the standard of sewage treatment, it is still a significant issue. According to survey reports carried out every year since 1993 by the Marine Conservation Society, sewage related litter is the third largest category of beach litter. Our own research has shown that sewage litter is the most offensive type of litter to beach visitors.

The research discussed in this document was carried out in order to understand why people flush items down their toilets and what we could do to try to change this behaviour. It involved talking to people both face-to-face and through an online questionnaire and proved to be a subject that people were surprisingly willing to talk about.

Through the research it became apparent that there was a lack of knowledge about how the sewer system works and that most people give very little or no thought at all to what happens to items they flush. All the respondents without exception were completely unaware that flushing such items had a detrimental effect on the environment.

It became clear that many people view their toilet as a way of conveniently disposing of messy items and this convenience could prove to be an obstacle in getting people to change their behaviour. However it is not impossible. Many of the respondents seemed concerned about the impact they were having on the environment and

appeared willing to change once they were aware of the problems, a strong indicator that people want to do something positive to help improve the environment.

Consumer education is vital therefore to encourage responsible disposal of these products. Education and awareness raising campaigns can challenge attitudes towards what people put down their toilets and this information can come from numerous sources including water companies, sanitary product manufacturers, toilet manufacturers, government and campaigners.

ENCAMS believes the following recommendations would go a significant way to reducing sewage related litter:

- Improvement by water companies to combined sewer overflows to stop waste escaping into waterways;
- Raising public awareness about sewage litter, and the problems associated with flushing items, through national and local campaigns using clear and consistent messages;
- Education of children in the correct disposal of sanitary waste;
- Mandatory disposal information on all personal care products, medicines and contraception;
- Sexual health advice to include instructions on correct disposal of condoms and similar items;
- Information about flushing to be put on new toilets and in bathroom sales brochures;
- More availability and greater awareness of reusable products rather than disposable products;
- Reduction in the use of plastics in sanitary items;
- Simple and effective alternative disposal methods to be promoted.

2 INTRODUCTION

2.1 What is sewage related litter?

Sewage related litter is made up of sanitary items that are flushed down public and private toilets and end up littering inland and coastal waterways. Such litter typically consists of cotton bud sticks, sanitary towels, backing strips, tampons, plastic tampon applicators, cotton wool, condoms, cigarette stubs, facial cleansing wipes and toilet fresheners. Less common items include nappies, plasters, medicines and toilet roll tubes.

Sewage related litter is the third largest category of beach litter and is the most offensive to beach visitors. Research has shown that just one item of sewage related litter is completely unacceptable to members of the public.

Beach litter has been monitored every year since 1993 through the Beachwatch survey which is organised by the Marine Conservation Society (MCS). Each year thousands of volunteers from around the UK spend just a few hours helping to clean up and document the type and amount of litter found. This gives an invaluable insight into beach litter which can be traced back more than 12 years. In 2006 the Beachwatch survey covered 187.6 km of beaches around the UK and counted 1,989 items of litter per kilometre.

The Marine Conservation Society classifies litter into six different sources. In 2006 the main source of beach litter (33.9%) originated from people leaving litter when they visited a beach. Litter originating from the fishing industry, either commercial or recreational, made up 11.2% of total beach litter. The third largest proportion of beach litter was sewage related litter representing 10.4% of all litter found on beaches in 2006. Shipping waste made up 2%, fly-tipped waste represented 0.9% of all beach litter and medical items made up 0.2%. The remainder of beach litter was made up of items for which the original source could not be identified.

2.2 How does it get there?

In the UK most homes are connected to the main sewers (those that are not are generally in remote areas and are serviced by septic tanks). The sewer system is designed to cope with natural waste and toilet paper which dissolves in water. Anything else has the potential to block both domestic drains and public sewers.

Blockages reduce the efficiency of the sewer system and can cause flooding which adds to the problem of sewage related litter.

Waste water, which includes anything that goes down the toilet, is carried through a network of sewers. The waste is filtered once it reaches the treatment works to remove most of the larger items that are flushed away. However filter screens can get blocked allowing waste to escape from overflow pipes, and waste can also damage filters, allowing items through. Some items such as cotton bud sticks and condoms are small enough to pass through filters and continue on through the system to be discharged into waterways.

Combined sewer overflows (CSOs) can be another cause of sewage related litter. During periods of heavy rainfall, rainwater goes into the sewers causing a massive increase in flow within the sewer network. If there is too much volume the waste water will be discharged without treatment in order to prevent flooding.

Water companies have invested heavily in upgrading combined sewer overflows in recent years, resulting in a reduction in sewage related litter on beaches and inland waterways, but there are still many unsatisfactory CSOs in operation.



Litter picking on the beach

2.3 What is the problem with sewage related litter?

The visual impact of sewage related litter on the environment is significant and one which will deter visitors from using the beach, impacting on tourism and the local economy. It costs local authorities approximately £14m¹ per annum to clean marine

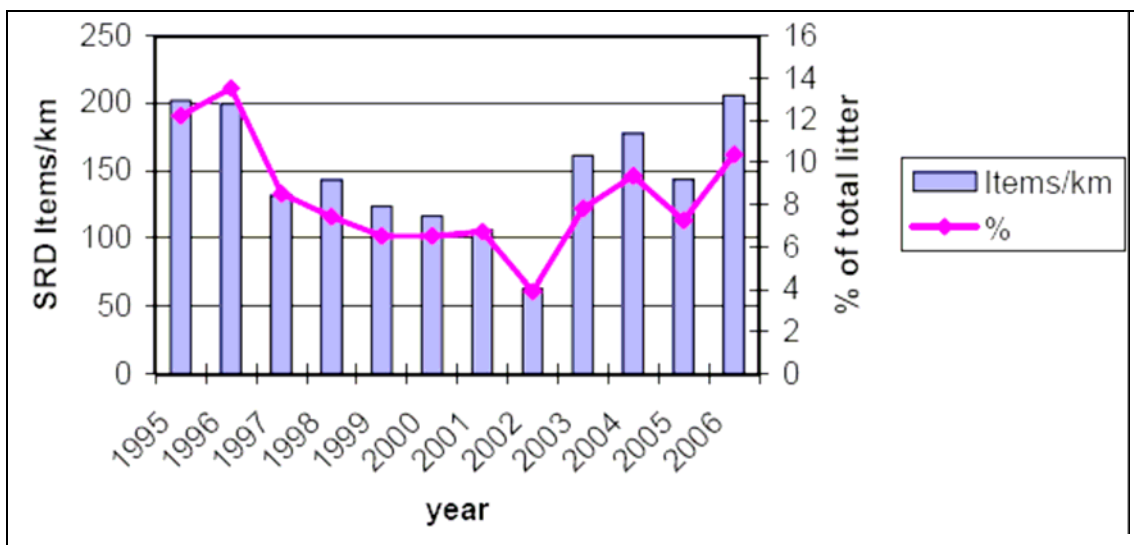
¹ Weston-super-Mare's two beaches cost £100,000 per annum to clean; Suffolk Coastal District Council spends £60,000 per year cleaning its 50km of mostly shingle coastline; and Weymouth and Portland Borough Council spend £39,000 per km of beach cleaned. This implies an annual cost to English and Welsh local authorities of £14m - Environment Agency

litter from beaches, not to mention the thousands of hours that volunteer groups spend each year cleaning up.

It can also pose a danger to wildlife - sea birds have been found with condoms in their stomachs and turtles can mistake plastic debris for food.

Since 1995, the Urban Waste Water Treatment Directive has exerted significant and positive pressure to clean up sewage discharges, and in the past five years the UK water companies have invested £6.47b in the sewer infrastructure².

The investment that water companies have made appears to have had some effect as the chart below shows. According to the MCS Beachwatch surveys, the amount of sewage related debris (SRD) found on beaches has seen a steady decline from 1995 to 2002. Unfortunately since then sewage litter has seen a general increase with the latest results from the 2006 survey showing a rise to 10.4% of all beach litter.



The percentage of sewage litter recorded by the MCS relates to the overall amount of litter found on beaches but the density of litter is also calculated. In the 2005 report almost all sanitary litter items (not including cotton bud sticks which makes up a large proportion of sewage litter) had decreased in density with the exception of tampons which increased from 1.77 items per kilometre in 2004 to 3.4 per kilometre in 2005, and towels/panty liners which increased from 8.5 per kilometre in 2004 to 11.2 per kilometre in 2005.

² Marine Conservation Society website - sewage pollution - 2006 - <http://www.mcsuk.org/mcsaction/pollution/sewage>

Although these items make up a very small proportion of beach litter (0.2% and 0.6% respectively) people find this type of litter the most offensive.

A questionnaire investigating the litter problems in the Severn estuary and Bristol Channel area showed that sewage related debris and potentially hazardous items were the most offensive forms of litter pollution. The study, relating to public attitudes, perceptions and opinions of beach litter, showed that beach choice was primarily decided by the presence of clean sand and water and that sewage related debris and hazardous items were the most offensive litter items (90% stated they would not visit a beach with just one item of sewage related debris present)³. Research carried out by ENCAMS in 2005 confirmed this finding. The beach users segmentation research found that despite the differing needs of the segments in regard to amenities, the requirement for a clean beach is the single most important factor when visiting a beach⁴.

2.4 Regulation

There are several European directives that regulate sewage discharges with the aim of improving water quality standards. These include the European Bathing Water Directive, the Shellfish Waters Directive and the Urban Waste Water Treatment Directive. In order to achieve the standards set by these directives waste will go through one or more of the following progressive treatments depending on the level of water quality required:

- preliminary treatment which removes grit and solids;
- primary treatment which removes about two-thirds of the solids;
- secondary treatment which involves biological treatment of the solid waste;
- tertiary treatment which disinfects the waste water.

The European Urban Waste Water Treatment Directive 1991 requires a minimum of secondary treatment for all works serving a population above 2,000⁵. However, the majority of the 9,000 waste water treatment works in the UK serve populations of less

³ Investigation of Litter Problems in the Severn Estuary and Bristol Channel Area - Dave Jowett - Environment Agency 2001 - <http://www.environment-agency.gov.uk>

⁴ Beach Users and Surrounding Area Segmentation Research - 2005 - ENCAMS

⁵ Urban Waste Water Treatment (England and Wales) Regulations 1994
http://www.opsi.gov.uk/SI/si1994/Uksi_19942841_en_1.htm

than 2,000⁶ and therefore much of the sewage waste flowing back into rivers may have gone through only the preliminary stage of treatment, greatly increasing the likelihood of sewage litter being discharged into waterways.

The table below gives more detail on the treatment process.

<p>Preliminary treatment</p> <ul style="list-style-type: none"> • <i>Waste water is flushed into the sewers and carried to the sewage treatment plant.</i> • <i>Large pieces of material are removed through inlet screening. A fine mesh screen blocks smaller bits of debris.</i> • <i>Waste from both screening processes is taken to landfill.</i> • <i>The sewage then goes into large tanks where heavy particles of sand, ash, stones and grit sink to the bottom. This will be used in landfill or to build new roads.</i> • <i>The sewage is then discharged into waterways.</i>
<p>Primary treatment</p> <ul style="list-style-type: none"> • <i>The sewage goes into primary settlement tanks where sludge sinks to the bottom.</i> • <i>The liquid is then released into the waterway and the sludge is taken to landfill.</i>
<p>Secondary treatment</p> <ul style="list-style-type: none"> • <i>The sludge is sent to sludge treatment tanks where it is thickened, heated to 35^oC and stored in tanks for 7 to 14 days. The treated sludge is then further thickened and sold to farmers as fertiliser.</i> • <i>Methane gas produced at this stage is converted into electricity.</i> • <i>The liquid is sent to aeration lanes where oxygen is pumped into the effluent to encourage natural bacteria to grow and eat harmful materials.</i> • <i>The treated effluent then goes into final settlement tanks where any remaining sediment sinks to the bottom. This sediment (or activated sludge) is recycled back into the aeration lanes.</i> • <i>The clean effluent is then discharged into the waterway.</i>
<p>Storm overflows</p> <ul style="list-style-type: none"> • <i>During periods of heavy rain excess water drains into the sewer system.</i> • <i>In order to prevent flooding, diluted raw sewage is released into the waterway through overflows.</i>

The preliminary treatment is a significant measure in the removal of sewage related litter as this is where most items that can become litter are removed. The screening process involves two stages: the first stage removes any large items exceeding 6mm, such as plastics, rags, etc., and the second stage involves closer spaced bars, drum or mesh screens. The mesh filters stop any items bigger than 3mm, but items

⁶ Of the 9,000 waste water treatment works in the UK only about 1,600 serve population equivalents greater than 2,000. Around 700 serve population equivalents of greater than 10,000.

such as condoms and cotton bud sticks can still pass through and filters are easily blocked or damaged.



As cotton buds are almost exclusively made of plastic they will float, which adds to their propensity to being discharged with the treated effluent. It also means that they will persist in the environment and they are a prevalent source of sewage related litter.

Filter blocked by cotton buds (Nicki Souter)

2.5 What is being done to reduce the problem?

The water companies have a duty to ensure that waste water is sufficiently treated before being discharged back to a natural waterway. The Urban Waste Water Treatment Directive 1991 required all member states to 'decide on measures to limit pollution from storm water overflows'. As a result, the UK government required 85% of combined sewer overflows to be brought up to standard by 2005.

Although the Directive required only a primary treatment of waste in coastal areas that had been designated as high natural dispersion areas⁷ (58 of which were designated along the coastline in England and Wales) the government elected that all discharges into the sea must undergo a secondary treatment as a minimum from 2005.

Both these measures have gone some way to reducing the amount of sewage related litter found on our beaches and waterways. However sewage litter is still a problem in some areas, especially in heavily populated areas.

The Water Supply (Water Fittings) Regulations 1999 could also have had an indirect effect on what people flush⁸. Since 2001 all new WC installations must have a maximum single flush of 6 litres and slim-line toilet cisterns have a flush of just 4.5 litres. This reduces significantly the ability for toilets to flush larger items compared

⁷ High dispersion areas are where the waterway is capable of coping with sewage discharge without too much impact on the local eco-system in relative terms.

⁸ The water Supply (Water Fittings) Regulations 1999 – Defra
<http://www.opsi.gov.uk/si/si1999/19991148.htm>

with the old style cisterns which used up to 9 litres of water each flush. As more people replace bathroom suites they find themselves having to have far more consideration for what they put down the toilet in order to prevent blockages in their own drains.

There is also evidence that messages in public toilets about not disposing of sanitary items down the toilet may also have influenced people's behaviour at home. Our research indicated that 47% of respondents said they were less likely to dispose of items down a public toilet than down their own toilet, a figure most likely aided by the provision of sanitary disposal bins in many public conveniences.

Despite these efforts there is still a significant amount of sewage litter ending up on our beaches. If there is to be a real change in flushing behaviour then there needs to be a simple and easy solution. To take recycling as an example, the provision of recycling boxes and bags alongside awareness campaigns has increased recycling rates in England and Wales from 8% in 1998 to 27% in 2006⁹.



However, this result has been achieved over a number of years and with a great deal of investment in the provision of waste collection services.

The significant fact about the recycling figures is the clear indication of the number of people who *want* to do something to make a difference. It is this aspect that we should be focusing on. We need to offer real solutions that will make a real difference and will give people the knowledge, motivation and tools in order to make the necessary changes.

⁹ Waste management statistics - Defra <http://www.defra.gov.uk/environment/waste/statistics/index.htm>

Below are some past and present examples of national campaigns aimed at reducing sewage litter.

BAG IT AND BIN IT

This initiative was established thanks to the collaborative efforts of the Marine Conservation Society, South West Water, Surfers Against Sewage and other organisations concerned about sewage related litter. The aim of the campaign was to highlight the environmental problems of 'flushable' personal items and offer advice on proper disposal. The campaign ran from 2001 to 2004 and was managed by UKCEED, an independent charitable foundation focusing on sustainable business, the marine environment, and information and communication technologies.

The campaign supplied promotional material such as stickers and posters, and a website was developed with the help of UK Water and the water companies. The website, which is still maintained, provides simple details of the effects of sewage related litter on the marine environment and wildlife, statistical facts, and information on the sewer system.

<http://www.bagandbin.org/index.php>

THINK BEFORE YOU FLUSH

The 'Think Before You Flush' campaign was launched in 1999 by Scottish Water to raise awareness of the issues associated with flushing bathroom and sanitary waste. It incorporated advertising, leaflets, local groups and events, as well as 'beach cleans' and school visits.

Neither campaign is currently active, however further research in Scotland indicated that 'Think before you flush' was a more effective slogan than 'Bag It and Bin It' (Professor Richard Ashley, Bradford University), although it could be confused with conserving water rather than with what items people flush down the toilet.

<http://www.sepa.org.uk/news/releases/1999/west9912.htm>

BLUE FLAG

Blue Flag is a prestigious, international award scheme which acts as a guarantee to tourists that a beach or marina they are visiting is one of the best in the world. It is awarded to coastal destinations which have achieved the highest quality in water, facilities, safety, environmental education and management.

Over the years Blue Flag has acted as an incentive to many beach managers to improve the quality of the coast and their hard work has led to a revival of the UK coastline and beaches. The number of beaches and marinas gaining Blue Flag status increases every year – with more than 3,100 now displaying the quality indicator.

Blue Flag is administered in England and Northern Ireland by ENCAMS and is managed internationally by the Foundation for Environmental Education (FEE).
<http://www.blueflag.org.uk/>

QUALITY COAST AWARDS

ENCAMS has taken the opportunity to build on the success of Blue Flag to develop an exciting new type of award in England: the Quality Coast Award. The purpose of the Quality Coast Award is to recognise different parts of the coastline that are well managed to suit the needs of different users. This award aims to reflect the hugely diverse nature of our coastline and the qualities of our beaches. It is open to all beaches irrespective of whether their water quality is monitored. It requires the combination of a sound management system and targeted communication to specific user groups to ensure they experience quality visits to the coast.

ADOPT-a-BEACH and BEACHWATCH

The Marine Conservation Society has run the Beachwatch campaigns since 1993, and the Adopt-a-Beach campaign since 1999. They involve thousands of volunteers in beach cleans and litter surveys every year. By recording information on the quantities and types of litter found on our beaches through a detailed survey, the MCS has identified the main sources of beach litter.

With this information they have been able to target specific sources of litter and influence government policy and industry practices to help develop solutions to the problem of marine litter.

The Adopt-a-Beach programme organises quarterly beach cleans and litter surveys, monitoring levels of litter throughout the year and helping to reduce the problem at source.

Beachwatch is an annual nationwide beach clean up and litter survey. It takes place over the third weekend of September every year.

The annual MCS Good Beach Guide aims to stop the dumping of raw sewage at sea by promoting beaches with the best water quality. In 2000 the MCS recommended 200 UK beaches. In 2006 they recommended 505 beaches, recognising the effort and investment that has gone into cleaning up the coastline.

<http://www.adoptabeach.org.uk/>

2.6 What is the purpose of this report?

The main purpose of this report is to provide an overview of the market research undertaken by ENCAMS in 2006 to find out what people flush down toilets, why they flush these items and how often they flush them. The report discusses the conclusions of the research and looks at ways in which we can reduce the problem of sewage related litter. It will also form part of a media campaign on sewage related litter to be run in 2007. Full details of the research can be obtained on request from the market research department, ENCAMS.

2.7 Who is this report for?

This report is likely to be of general interest to the water industry, governing bodies and campaigning organisations that have an interest in this issue. It will also be of specific interest to anyone with a responsibility for the management of beaches and waterways and those concerned about the impact of sewage related litter on the local environmental quality.

3 METHODOLOGY

3.1 Aim

The aim of this research was to better understand the attitudes and behaviour of people who flush items such as cotton buds down the toilet and what would be required to encourage them to use a different disposal method. This section describes what was done and why.

3.2 Qualitative research

The first part of the research consisted of 24 depth discussions about individual attitudinal and behavioural patterns. The depth interviews were used to gain an insight into what items people flush, why they flush them, their awareness of the sewer system and what would make them change their behaviour. The interviews, lasting approximately one hour, were conducted during April 2006.

The selection process involved making an assumption that all households contribute to the problem of sewage related litter and so respondents were randomly selected from local telephone directories across three regions in England (North, South and Midlands).

In order to qualify for the interview respondents were required to have flushed at least two items of litter (identified by the Marine Conservation Society as the main sources of beach litter in the 2005 survey) down their own or any other toilet in the past 12 months. These items included tampons, sanitary towels, cotton wool, cigarette stubs, cotton bud sticks and condoms.

As many of the sewage litter items are related to female activity, twice as many females to males were recruited. We also wanted to know if having young children in the household affected flushing habits so we recruited a proportion of respondents who had children under the age of three.

In order to gain an insight into whether people were affected by the presence of sewage litter, at least half of all the respondents we recruited had visited a beach, canal, lake or river within the past 12 months.

The depth interviews were aimed at understanding people's reaction to sewage related litter and to investigate their knowledge and attitudes towards this issue. We wanted to identify the types of items that are flushed down toilets and to explore people's thought processes prior to flushing to understand how the link between flushing behaviour and sewage related litter might be more firmly established.

3.3 Quantitative research

The questionnaire was developed based on the findings from the qualitative stage and was aimed primarily at quantifying the data.

An online survey was used to achieve a wide geographical spread covering standard demographic groups: age, sex, occupation, marital status, number of children and postcode.

Respondents from panel listings were invited to respond to the questionnaire and the survey was live during the third week in April 2006.

The profiles of respondents were assessed as they came in to ensure a full range of demographics. Where returns were low for a particular segment additional requests were made for specific respondents. The overall sample size was 1,653.

4 RESEARCH RESULTS

In this section the research on sewage related litter is summarised and discussed. The respondents' comments from the depth interviews are word for word and shown in italics with quotation marks. It should be emphasised that quotes used in this report have been used simply to illustrate particular points. They do not reflect the views of ENCAMS.

4.1 Who disposes of rubbish down the toilet?

We wanted to know if there were any particular groups who flushed items down the toilet more than others.

The results of the online questionnaire showed:

- No significant differences in flushing behaviour between regions (see table below);
- More females (79%) than males (65%) have flushed items down a toilet in the past;
- People with children are more likely to flush items (76%) compared to those without children (69%);
- 72% of people in England have flushed items down their own toilet or any other toilet in the past, and 57% have flushed items in the last year.

Proportion of respondents who have flushed foreign items in the last year	
English Region	Flushed in last year (%)
North West	62
Home Counties (within M25)	60
East of England	60
South	59
West Country	55
Midlands	55
Home Counties	54
North East	51
TOTAL	57

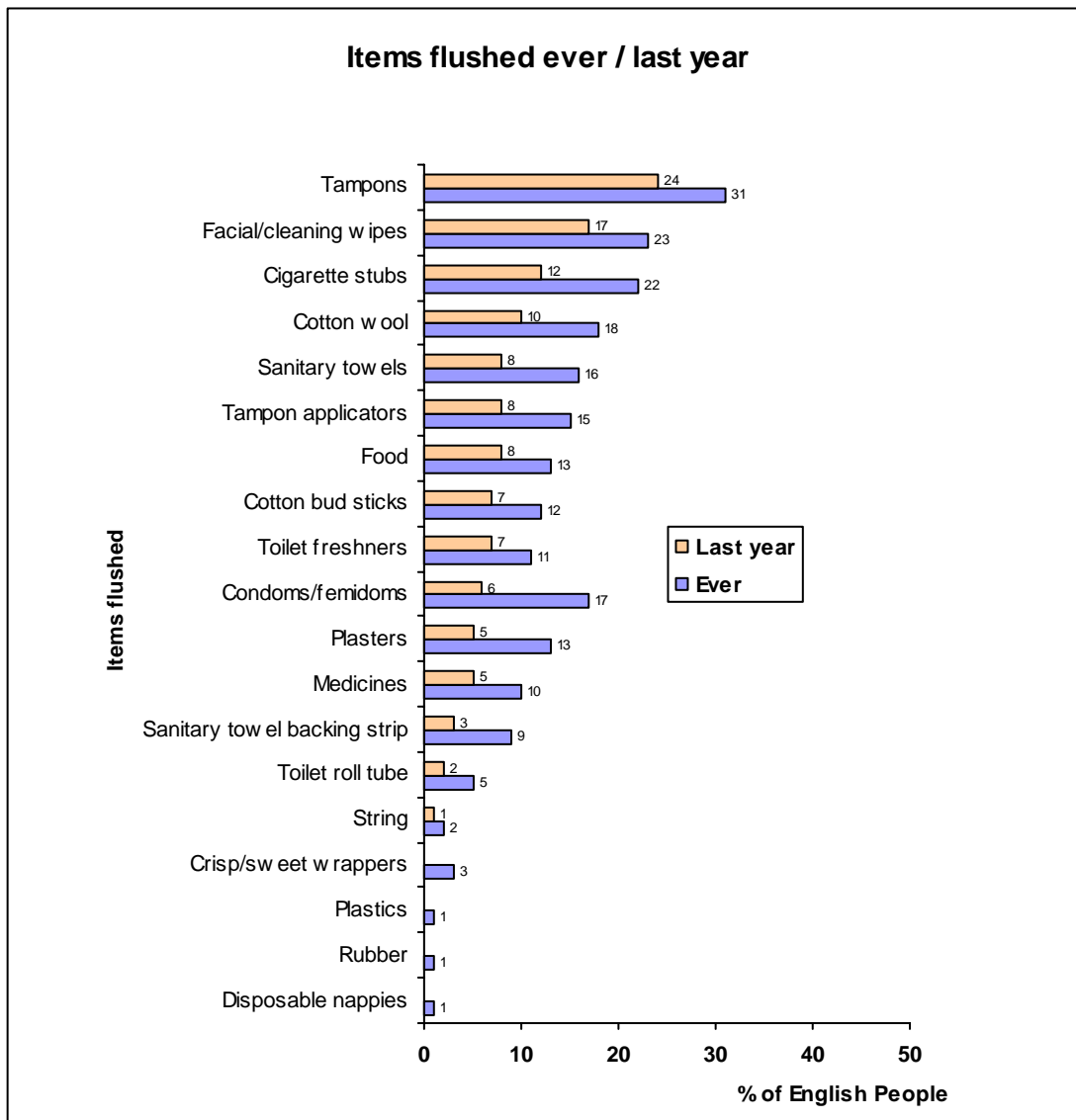
Most people see the toilet as a convenient way to dispose of bathroom items such as cotton bud sticks and facial wipes as well as more messy items such as tampons. Very little thought or concern is expressed in doing so.

“Once it disappears down the toilet, it’s like it just doesn’t exist any more, I don’t even think about it.”

4.2 What items go down the toilet?

From the online survey, specific items mentioned as having been flushed down the toilet both in the past and in the last year are shown in the chart below.

The top four most common items flushed away in the last year were: tampons (24%), facial cleansing wipes (17%), cigarette stubs (12%) and cotton wool (10%). Less common items included plasters and medicines (5%), sanitary backing strips (3%), toilet roll tubes (2%) and string (1%).



For items flushed ever, the top four remains the same but there is a big difference between the number of condoms / femidoms flushed in the last year (6%) compared to the number flushed ever (17%) and also between the number of cigarette stubs disposed of last year (12%) and ever (22%).

Less common items that people admitted to ever disposing of down the toilet were crisps/sweet wrappers (3%) and plastics, rubber and disposable nappies all at 1%.

Other items including bandages, polystyrene, plastic cups, incontinence pads, fast food containers, razor blades, colostomy bags, cloth, rope, metal, foam/sponge, glass, wood pieces and towelling nappies had all been disposed of down the toilet at some point by less than 1% of the respondents.

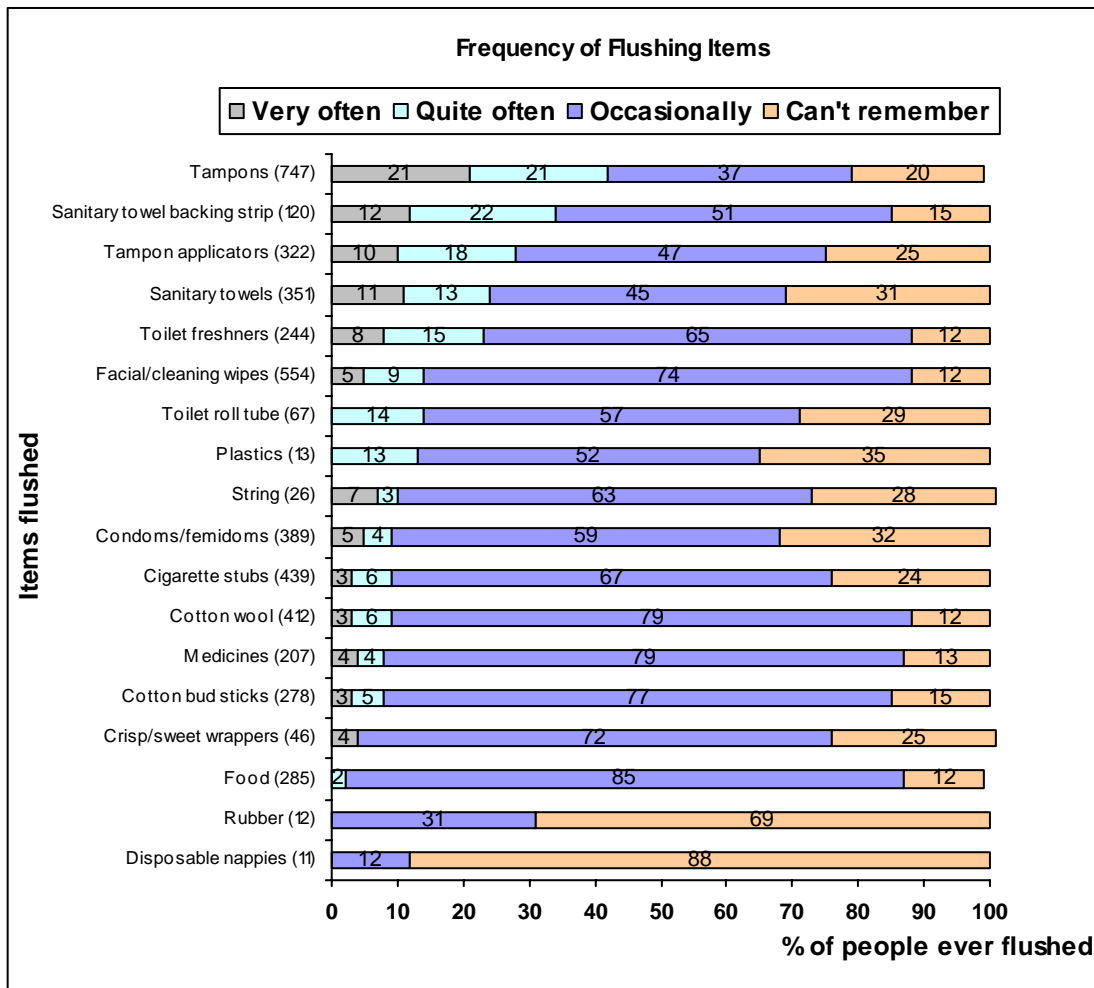
Plastic drinks bottles, metal drinks cans, tights and syringes/needles had never been flushed by any of the respondents.

Fewer items were flushed last year than ever, probably because of the infrequent nature of flushing items and changes in people's life cycle, for example children growing up, contraception methods changing, etc.

4.3 How often are these items flushed?

Respondents were asked how often they disposed of these items. Tampons, which were the most commonly flushed item, were also the most frequently flushed item. Of those who had disposed of tampons down the toilet, 42% said they did so either very or quite often. Other frequently flushed items were sanitary towel backing strips (34%), tampon applicators (28%), sanitary towels (24%) and toilet fresheners (23%). The majority of those who disposed of cotton wool, cotton bud sticks, food and medicines said they did so only occasionally.

The following chart shows the frequency of flushing items.



4.4 What are the main reasons for flushing these items?

The biggest reason for flushing items down the toilet was hygiene. Forty seven per cent of people believed that it was unhygienic to put dirty items such as used tampons in the bin.

“I can’t imagine putting anything with bodily fluids on them anywhere else but down the toilet, what are you supposed to do with them?”

Lack of awareness was consistently apparent. People either thought there was no other way to dispose of certain items or that it was perfectly acceptable behaviour. Thirty two per-cent of people questioned in the online survey, and everybody who was interviewed in the depth interviews, believed that the sewage system could cope with such things and that it was perfectly normal to dispose of personal items down the toilet.

“I never even give it a thought. No one has ever given me any information that tells me what I can and can’t put down the loo so I just do it.”

“I just assumed the sewage system could deal with anything as long as it goes down.”

Smell and messiness of items was another major reason for using the toilet for disposal. Twenty two per-cent believed the item would smell if left in a bin and 21% wanted to get rid of messy items as quickly as possible.

Seventeen per-cent of respondents cited embarrassment or discretion as the reason for flushing personal items.

“Can you imagine if a bag full of used tampons split all over the street outside my house? The bin men would see it and it wouldn’t be very nice for them to clear up.”

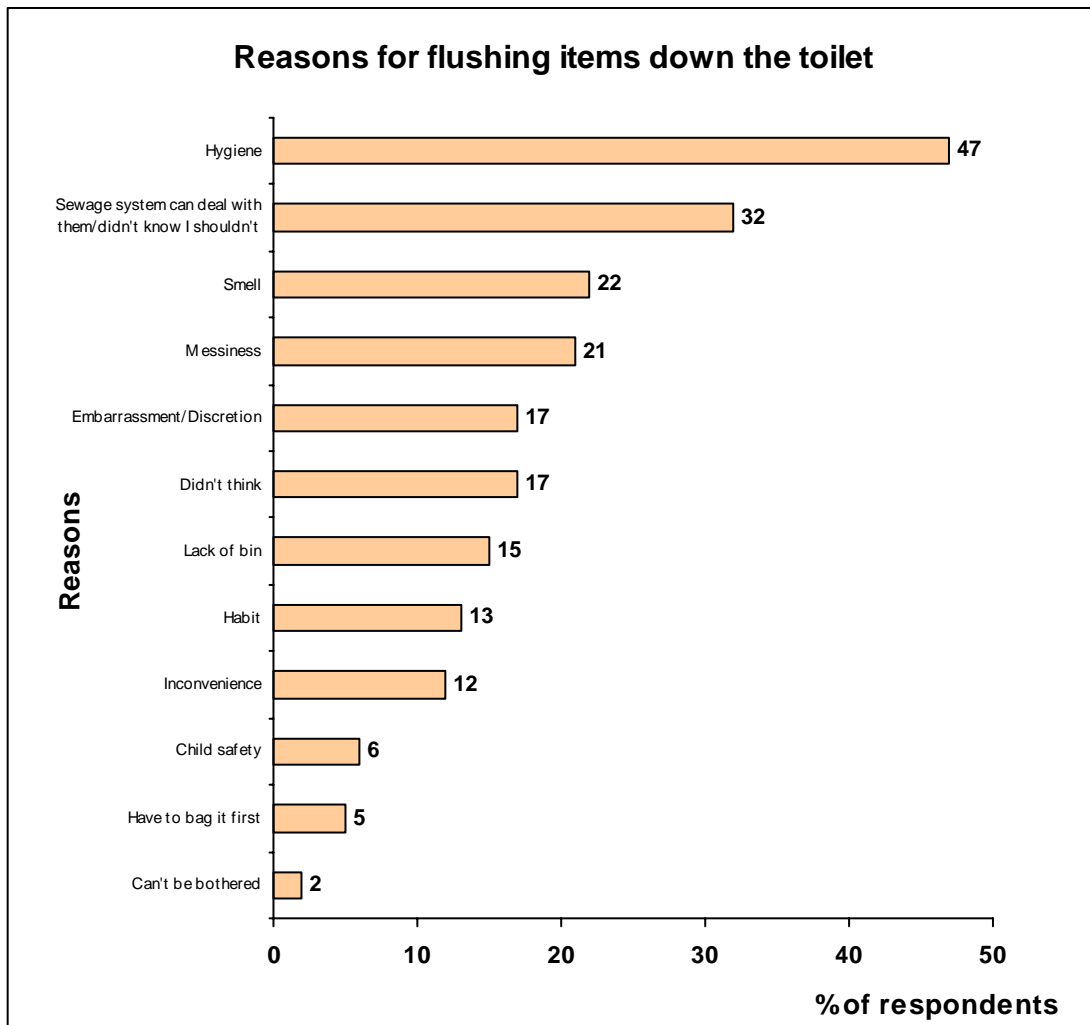
Other reasons for using the toilet to flush personal items included not thinking or out of habit, no bin in the bathroom, inconvenience, not wanting to have to bag it first or couldn’t be bothered to dispose of it any other way.

“I know I could take the medicines back to the chemist but it’s a lot easier to flush them away.”

There was also concern that children might get at them.

“I wouldn’t want my little girl to go rooting around and find a tampon in the bin.”

People's reasons for flushing items down the toilet are summarised in the following chart.



4.5 Awareness of waste water treatment

There was a lack of awareness about how the sewage system works especially among the lower socio-economic groups.

“I haven’t got the foggiest idea what happens to them once they go down the loo. I flush it and it goes away and I don’t worry about it.”

“It’s something that never crosses my mind, I never think about it. I have no idea what happens to it.”

“I didn’t know about overflows, I thought the sewage works could deal with everything.”

However, the majority of respondents had some idea that sewage waste goes through a treatment system prior to being pumped into the sea.

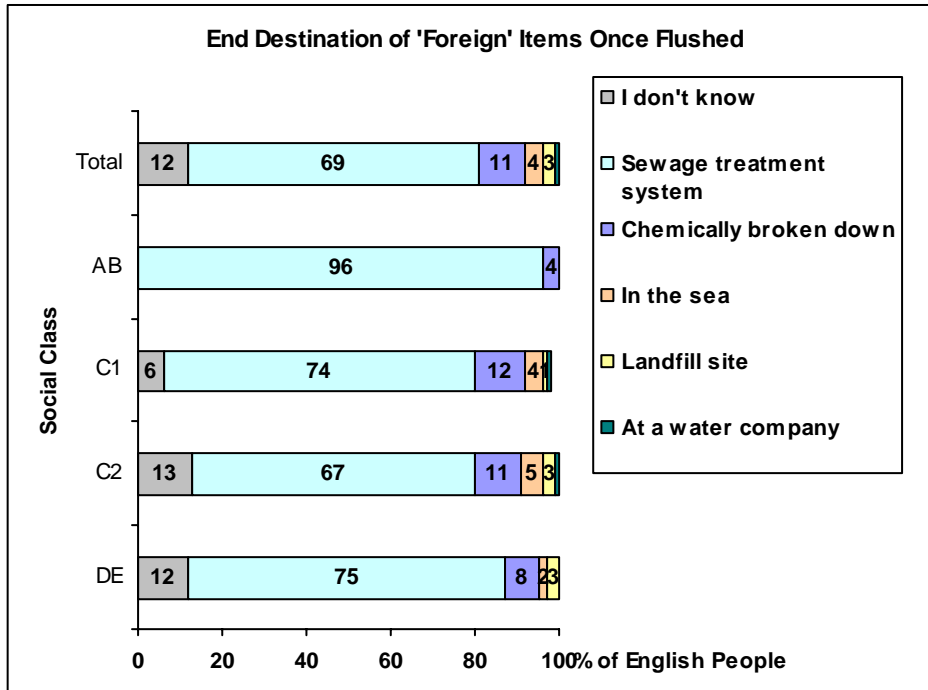
“I think the stuff is carried under the house to some sort of treatment works where the sewage is treated in a safe way before the water is let out into the sea.”

Some people seemed more informed about the process.

“I thought it would go through a filtration system and then get broken down chemically and then recycled.”

We asked people where they thought foreign items ended up once they had been flushed. The next chart shows the level of awareness based on socio-economic groups. Overall, 69% thought that the sewer system dealt with foreign items, 12% didn’t know what happened to the foreign items once the toilet was flushed and 11% believed that any foreign items were chemically broken down. A small percentage thought items were dumped at sea (4%), taken to landfill (3%) or dealt with by the water company (1%).

A higher proportion of females (17%) stated they didn’t know what happened to items once they were flushed down the toilet compared to males (6%).



Many of the respondents believed that the sewage systems abroad (mainly in other parts of Europe) are less efficient than our own sewerage system.

“You sort of know toilets in Spain can’t handle anything, so you don’t do it, but in England they can deal with most things I think, so you don’t even think about it.”

All the respondents without exception in the depth interviews were unaware of the effect of flushing items. When informed of the problems associated with this type of disposal most of them were surprised and upset.

“I am devastated that I have been doing this and I didn’t know I shouldn’t be.”

They assumed it was perfectly acceptable - it was something that they had always done.

“Until you came today, no one has ever pointed this out to me before.”

“There is nothing on packaging to tell you whether you should put them down the loo or not, well not that I have noticed anyway.”

4.6 Public toilets

We asked the respondents whether they were just as likely, more likely or less likely to flush items down public toilets. Overall 47% of respondents were less likely to dispose of items down a public toilet than down their own toilet whilst 11% of respondents were more likely to dispose of items down a public toilet. The remainder (42%) said they were just as likely to flush items down a public toilet as they were their own toilet.

The likelihood of flushing items down a public toilet was also affected by which socio-economic group they belonged to. None of the AB group said they were more likely to put things down a public toilet than their own whereas 9% of C1s, 11% of C2s and 15% of DEs said they were more likely to flush items down a public toilet than their own.

“You always see cigarettes and cigars in the urinals; it’s just a convenient place to put them.”

4.7 Sewage litter

Respondents to the depth interviews were asked about their perception of sewage litter. It must be noted, however, that this was a very small number and no statistical evidence can be gathered from these statements.

Of those who had visited beaches or waterways in the past year all of them had seen general litter but nobody had seen any litter that was obviously sewage related. Sewage litter therefore was not a big issue for them and it didn’t offer any motivation for changing their behaviour, even though they found it far more distasteful than ordinary litter.

“I’d be much happier going to a beach with a crisp packet that had been dropped than a crisp packet that had gone through a sewage system.”

Those who spend more time close to waterways are more likely to be aware of litter and rubbish.

“I’m an angler and I can go to places where I have to take a bag to collect rubbish that people have thrown in the last week.”

4.8 Changing behaviour

The chart below shows the level of challenge for tackling behaviour. Items that are acceptable to flush and are usually flushed without thought include:

- Any small items that are considered unhygienic such as tampons, tampon applicators, sanitary towels and condoms;
- Perceived biodegradable products such as cotton wool and facial cleansing wipes;
- Any small items that will easily flush such as cotton bud sticks and sanitary towel backing strips.

Acceptability to flush v level of hygiene

ACCEPTABILITY	C	A
	Plasters Sanitary towel backing strips	Cotton Wool Facial wipes Cig stubs Cotton bud sticks Toilet Fresheners Tampons Condoms/femidoms Tampon applicators Sanitary towels
Not Acceptable Conscience/ bioaer items	D	B
	Toilet roll tubes	Food Medicine Nappies
	Clean	Messy/Smelly

Tampons, condoms, tampon applicators and sanitary towels were considered the most unhygienic items as well as the most acceptable to flush, with tampons considered to be the most acceptable item to flush overall. These were also flushed the most frequently (see section 4.3).

Of the acceptable to flush items, only sanitary towel backing strips and plasters were considered clean.

Items that were flushed infrequently and that were more likely to make people consider their actions or worry about the consequences of flushing them included larger items such as dirty nappies and items such as food and medicine. Although there is some concern about flushing such things, people will still do so if the item is considered to be very messy, unhygienic or hazardous.

“I sometimes think will it go down and will it block my system, but until it does, I’m not going to worry about it.”

“Perhaps I shouldn’t have put the nappy down, there was a chance I might block the system but I did because it was messy.”

“Medicines are OK I think because you can put disinfectant down there.”

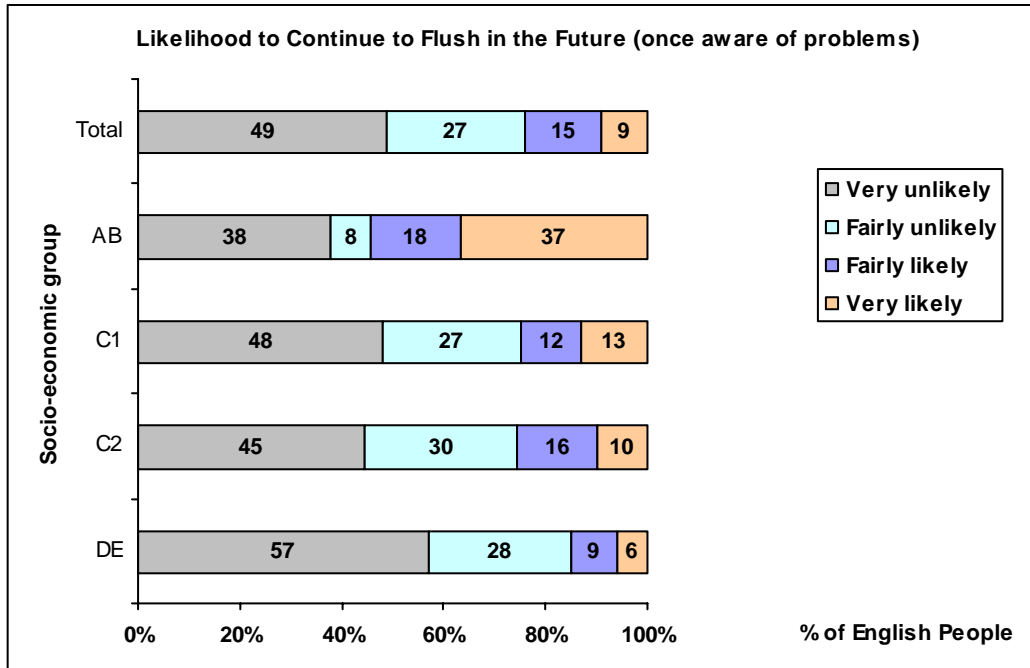
Of the less acceptable items to flush, only toilet roll tubes were considered clean.

All items that were counted most frequently on beaches from the Beachwatch surveys fall into section A, and all of them were considered unpleasant and therefore acceptable to flush by the respondents.

4.9 How willing are people to change their behaviour?

The results of both the survey and the depth interviews showed that in general once awareness was raised about the issue of sewage litter and people were made aware of items they should not put down a toilet, they were receptive to change. In order to successfully change behaviour, people need an acceptable alternative to flushing - the ease of dealing with unpleasant items simply by flushing them down the toilet is an important factor.

People in lower socio-economic groups tended to be more receptive to change than those in the higher groups. Those in group DE were the most likely to change their behaviour whilst those in group AB were the least likely, possibly because a higher proportion of ABs compared with other groups believed the sewer system could deal with items. See the following chart.



However, there was some confusion about what could go down the toilet and what should not be put down.

“Are we not supposed to flush anything, or are there things that the system can cope with?”

There was also concern that if waste was not disposed of down the toilet it would be taken to landfill sites with their other rubbish.

“If you don’t put things down the loo then you have land fill from rubbish in the bin.”

This highlights the general lack of awareness about what happens to items that are flushed down the toilet.

4.10 Alternative disposal methods

We asked the respondents if they had any alternative suggestions to flushing items down the toilet.

Some respondents with young children mentioned the availability of an easy to use, hygienic nappy disposal implement which seals each nappy in a bag ready for disposal. Scented bags for nappies are also available on the market.

Special waste collection services were also mentioned:

“Rentokil come and collect a box of sanitary stuff at motorway services, maybe there should be something like that.”

“In residential homes they have big yellow bins and in hospitals they have incinerators... but there is nothing available like that to us so the toilet is the best method.”

Others just wanted to be told what to do and be given the necessary tools:

“If they want us to do something different they have to help us by telling us what to do differently and provide us with the appropriate receptacles and collection services.”

Some were reluctant to consider other disposal methods for the more messy items:

“I would think twice about cotton wool and facial wipes, but I’m not happy with what else to do with tampons and things like that.”

More simple solutions seemed further from their thoughts:

“I have never thought of putting a bag in the bathroom bin, I suppose I could.”

“We just never have had a bin in the bathroom, I don’t know why, we’ve just never thought of it.”

5 CONCLUSIONS

Many people view their toilet as a disposal site for messy items and this research has highlighted that people are generally unaware of the environmental impact of what they put down their toilet. Most of the respondents believed that sewage is treated properly before being discharged into waterways and were unaware that much of the sewage discharged is subjected to very little, if any, treatment.

Generally no thought is given to what happens to the waste that is flushed down toilets. The few who do wonder tend to be confident that it is somehow dealt with appropriately.

The toilet appears to be viewed simply as a bin for the disposal of bathroom items, a point highlighted by comments from respondents who had never considered having a bin in the bathroom. This was especially true with regards to the messy items such as tampons. People want to dispose of them in the most convenient way possible with the least amount of handling and there was some concern expressed over other disposal methods for these items.

As well as a lack of awareness about how the sewer system worked, the research also found evidence of a general lack of awareness about sewage litter. Of those who had visited beaches or waterways in the past year they had all seen general litter but nobody said they had seen any litter that was obviously sewage related. Sewage litter therefore was not a big issue for them and it did not offer any motivation for changing their behaviour, even though the potential for seeing sewage litter was appalling to most people.

There was a distinct group who said they would not change their flushing behaviour even after being made aware of the problems with sewage litter, mainly because they believed the sewer system could cope with most things and that there is no obvious alternative available to them.

However, some respondents were far more receptive to change, especially those in the lower socio-economic groups. Many were surprised when they discovered that there was an issue with this type of disposal and once informed about the problems there was a willingness to change. However there was some confusion over what they could and could not flush down the toilet.

The clear message to come out of the research is the general lack of understanding about the sewer system and how items that are disposed of down the toilet are dealt with.

There is an obvious need therefore, for people to know what happens to the items they flush as well as offering suggestions on what they can do to reduce the number of items they flush. The more informed people are, the more likely they are to take action and implement their own changes, or at least begin to think about the consequences of their actions. This is indicated by the number of people in the survey who said they were less likely to flush items down a public toilet, demonstrating that people are capable of altering their flushing behaviour.

Information can come from numerous sources including water companies, sanitary product manufacturers, toilet manufacturers, government and campaigners. In the longer term, schools and parents can play their part by informing children about what they should not flush.

We would like to see disposal information on all personal care products, medicines and contraception. Sexual health advice should include instructions on correct disposal of condoms and similar items. Information about flushing could also be put on new toilets and in bathroom sales brochures which will have the potential to change flushing behaviour in the long term.

Messages need to be clear and consistent to stop confusion about what people can and can't put down the toilet. Awareness campaigns will also need to inform people about other more appropriate disposal methods. This will be more problematic for items that are messier but it can be overcome with a shift in attitudes.

Alternative disposal methods need to be simple but effective; something as straightforward as having a bin in the bathroom would encourage more people to use this form of disposal rather than using the toilet. More awareness and availability of reusable products rather than disposable products would not only reduce the amount of rubbish flushed but also the amount of rubbish sent to landfill.

5.1 What next?

ENCAMS is keen to ensure that all beaches remain clear from litter of all types and we will continue to work towards this aim. However, we would like to see sewage litter tackled as soon as possible.

We will be running a media campaign during 2007 to raise awareness about the problems and offering advice on suitable disposal methods. We are also looking to revive the 'Bag It and Bin It' campaign as well as working in partnership with Water UK and other organisations to reduce sewage litter.





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